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SEEDcraft

YOUR GUIDE TO
BETTER FLOWERS



CRUSADER — new
F₁ hybrid petunia
(page 8) — \$1.50

Gro. J. Ball
INC.
WEST CHICAGO
ILLINOIS

SUCCESSFUL FLORISTS
SOW *Ball* SEEDS

Vic, George and Carl Ball, sons of the founder of Geo. J. Ball, Inc. Their practical knowledge of horticulture, gained through years of work with their father (see page 5), has been supplemented by thorough university training in plant sciences. This combination of practical and scientific background is reflected in the quality of Ball seeds and service.

Their "SEEDcraft" is your guarantee of satisfaction.



Introducing **SEEDcraft** . . . and a New Service to Flower Gardeners

Since the turn of the century American florists have associated the name of Ball with the highest quality in flower seeds. Refer to any florist supply catalog—frequent reference to Ball strains of Asters, Sweet Peas, Snapdragons, etc., testify to this, as will your florist, if asked.

Now . . .

This year for the first time, we offer a limited list of selected florist strains which will be of interest to gardeners who want their time and effort to yield the **ultimate** in perfection of plant habit and bloom. Plants grown from Ball's seed will still be available from your florist, of course.

SEEDcraft . . .

has been prepared with two objectives:

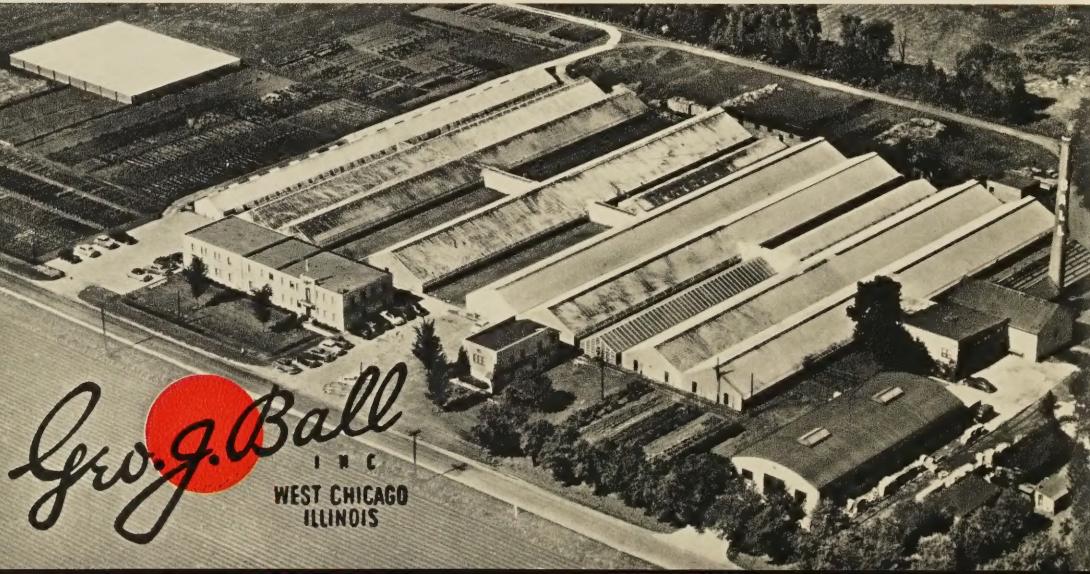
- To present the most accurate and authentic illustrations and factual descriptions of our most important offerings.
- To provide cultural information and other facts which are of interest to gardeners.

The Ball Clinic . . .

We will be pleased to hear from our gardening friends at any time—and our head grower will answer your questions to the best of his ability. Complete cultural information is provided on each packet.

→ Percentage of germination, complete cultural information and approximate number of seeds are found on all Ball seed packets. ←

Here is our modern seed office, greenhouse plant, and extensive trial grounds at West Chicago, Ill.



Ball Asters

We know that most of you prize Asters as a source of late summer cut flowers, and we know that you must be as tired of those small, open-centered "not-so-double" Asters as our florist friends were. That's why we spent 8 years of breeding effort in developing these new Ball Asters.

Under cheese cloth shade, the way florists grow them, these Asters produce 4 in., fully double flowers that rival medium size Chrysanthemums for size and beauty, and on stems 3 ft. in length. Grown in the open, 3 inch flowers and 2 ft. stems are not uncommon. Each plant produces 6 to 8 stems with few laterals so that a minimum of disbudding is necessary for maximum flower size.

Rose Ball. Extra large, fully double Chrysanthemum-like flowers. This is a rich, satisfying rose pink that is extremely popular with florists.

White Ball. Exceptional doubleness and fine, stiff stems have made this pure white Aster a standout. Grown extensively for the finest florist trade.

Price above 4 Asters, each: 1 pkt. (300 seeds), **75c.**

Special Collection. 1 pkt. each of above 4 Ball Asters, **\$2.50.**

Seed may be sown in the open about the time beans are sown, or they may be sown in frames 3 weeks earlier and transplanted to stand 12 inches apart. Liberal watering when dry and an application of one of the balanced plant foods such as Vigoro about half way through the growing season will help a lot to produce specimen flowers. Vigoro or similar materials should be applied at the rate of 4 lbs. per 100 sq. ft.

● See red dot at bottom of page 18.



Pink Ball. Ball Asters offered on this page are the ultimate in doubleness, flower size and stem length and strength—the most widely grown florist type, and ideally suited for home gardeners.

Pink Ball. A soft, satiny shell pink. This Aster possesses unusual flower size and dependable doubleness, and you'll like its sturdy stems.

Azure Ball. A clear, light lavender blue that blends well with white or pink. Slightly smaller than the other Ball Asters but very showy.



Ball Rainbow Coleus

The ideal annual for shade! Rich, bright hues—luminous foliage—the one truly distinctive annual.

Ever try Coleus from seed? In the 1930's we asked several florists this question. The answer was usually, "No, I take cuttings." Occasionally, "Yes." When "Yes," the answer always indicated disappointment with the dull, drab shades which were found in most seed strains of the '30's.

So, with the vigor characteristic of a true plantsman when challenged by a plant breeding problem, George Ball set out to develop an entirely new strain of seed Coleus—devoid of the deep, dingy tones—a new, lively strain, abounding in **bright shades** of yellows, pinks and rich reds.

Once developed, the quality of this strain was immediately recognized by leading florists, and today many of the best commercial bedding plant growers offer **only** Coleus grown from seed—**Ball's Rainbow Strain**.

Coleus is a remarkably versatile plant, producing beautiful foliage indoors as a house plant, or in a shaded garden—will not stand full sun. For best results, sow in spring along with Petunias so that well established plants may be set out when danger of frost is past.

Coleus, Ball Rainbow Mixed. 1 pkt. (300 seeds), 75c.

CUPID MARIGOLDS

Here is one of the newest and most unusual Marigolds we've seen. It is exceptionally popular with florists for its absolute uniformity. Free flowering—ideal for borders and edging.

Cupid Orange

Cupid Yellow (Pictured)

In addition to Cupid, we also offer:

Dwarf Color Magic. Varies from deep mahogany red to light golden yellow.

Dwarf Spry. Our special florist strain is unexcelled.

Tall Mix. Here is our best florist quality tall mixture of yellow, orange and gold—all large flowers and fully double, for cut flower use.

Price above Marigolds, each: 1 pkt. (300 seeds), 50c.



GEO. J. BALL
1874-1949

The Ball reputation with florists was established early in this century when Geo. J. Ball first grew cut flowers near Chicago.

He had an "eye" for superior types of flowers—also the patience and skill required to breed, select, and produce seed of these superior Ball strains.

Flower growers continue to this day to look to the firm founded by Geo. J. Ball for the best in florist strains.

An Entirely New Sweet Pea FLORIBUNDA

The remarkable Multiflora Sweet Pea introduced two years ago has been further developed (by its originator) into a class known as **Floribundas**.

Floribunda Sweet Peas have all the fine characteristics responsible for the popularity of Multifloras—longer, stronger stems with up to 6 and 7 blooms—and bloom well into the heat of the summer!

Try Floribundas for the newest and finest outdoor Peas.

Carmine Rose	White
Lilac	Pink
Purple	Formula Mixture

Price above Floribunda Sweet Peas, each: 1 pkt. (140 seeds, enough for 10 ft. row), \$1.50.

Collection. 1 pkt. each of 5 separate color Floribunda Sweet Peas, \$7.00.



Six and seven blooms per stem are common in the fine, new Floribunda and Multiflora strains. Here's one we found (at left) with 10 blooms!

MULTIFLORA SWEET PEAS

The original many-flowered Sweet Pea strain. Earlier flowering than the Floribundas.

George J. Ball. A bright rose-pink named for the founder of our firm who developed many fine Sweet Pea varieties still used by florists today.

Lavender	Orange-Cerise	White
Whirlwind (Light pink)	Multiflora Formula Mixture	

Price above Multiflora Sweet Peas, each: 1 pkt. (140 seeds, enough for 10 ft. row), \$1.50.

Collection. 1 pkt. each of 5 separate color Multiflora Sweet Peas, \$7.00.

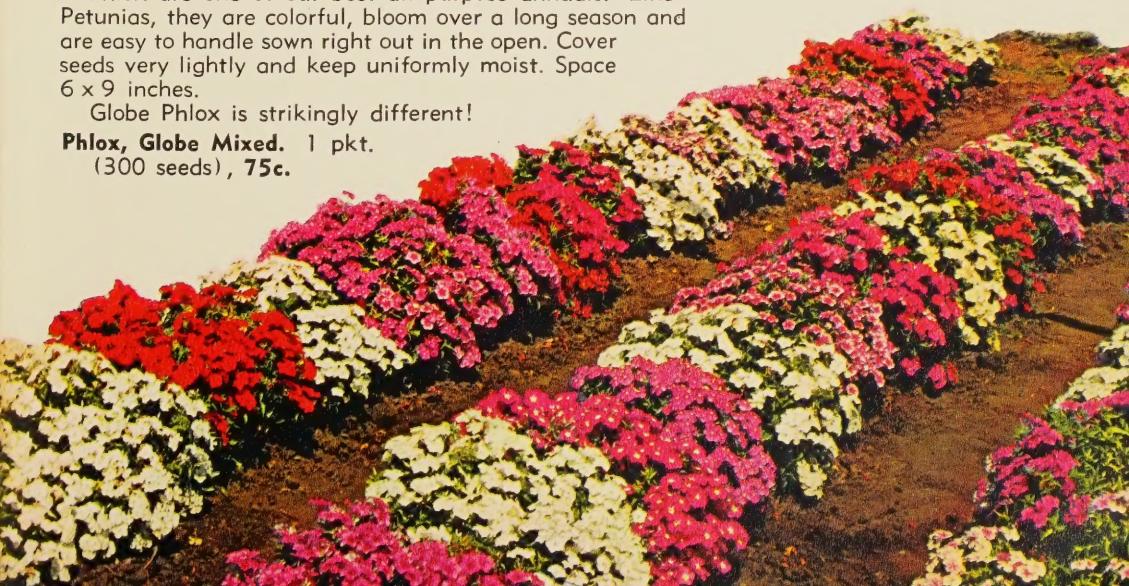
GLOBE PHLOX

An entirely new annual Phlox—absolutely uniform, rounded habit in a mixture of popular Phlox shades.

Phlox are one of our best all-purpose annuals. Like Petunias, they are colorful, bloom over a long season and are easy to handle sown right out in the open. Cover seeds very lightly and keep uniformly moist. Space 6 x 9 inches.

Globe Phlox is strikingly different!

Phlox, Globe Mixed. 1 pkt.
(300 seeds), 75c.





Canadian Queen, our finest, large flowered, fully double, separate color variety.

have developed a select list of 25 varieties we have selected the best eight varieties for you.

"Crown" your garden with these huge ruffled and fringed Doubles—"King" of the Petunia family!

Our 8 Best F_1 Hybrid All Double Petunias

Allegro. Brilliant, deep salmon-red. Fully double and delicately fringed.

Canadian Queen. A very fine true pink. Large, double, well ruffled flowers are held nicely above the compact bushy plants. Pictured above.

Caprice. Heavily doubled, deeply fringed, bright rose-pink.

Cotton Candy. Large flowered, light salmon. Fully double with vigorous dwarf plant habit.

Gaiety. The blotched or variegated flowers combine rose-pink with contrasting pure white to produce the "strawberries-in-cream" effect. Medium large, double fringed flowers are borne on very dwarf base branching plants.

Ball

ALL-DOUBLES

(F_1 Hybrid)

These large flowered F_1 Hybrid All Double Petunias will make your window box, border, garden bed, urn or pots the envy of the neighborhood. Try Double Petunias for a truly distinctive yet completely versatile garden subject!

Double Petunia seed is produced by costly hand pollination and is very fine. However, it is no harder to start than seed of the single varieties when seed is sown carefully as described in Petunia Culture on page 7.

Since Double Petunia seedlings develop a little more slowly than the ordinary singles, seed should be sown about two months before outdoor planting time. Spacing of these F_1 Hybrid Doubles in the garden is important. It is best to allow about 12 inches between plants.

After testing the best American, Canadian and Japanese strains for years we for our florist trade. From this list we

Nocturne. The best deep purple. Plants are compact and vigorous with medium large carnation type flowers.

Sonata. Extra large, extremely double, pure white flowers. Will branch more freely if plants are topped when 4 to 6 inches tall.

Ball Special Formula Mixture. A formula mixture of the best of the above listed varieties blended in proportion to their popularity.

Price above All-Double Petunias, each: 1 pkt. (200 seeds), \$2.00.

Special Collection. 1 pkt. each of Allegro, Canadian Queen, Gaiety, Nocturne and Sonata. 5 pkts. (200 seeds each), \$9.00.

Petunias

GRANDIFLORAS

(Giant Flowered)

Among Grandiflora Petunias, the California Giants have the largest flowers and are great favorites everywhere. The flowers are usually of more than one color; and because they are tetraploids, both flowers and foliage have unusual substance. The Ruffled Grandifloras are not quite as large as the California Giants, but bloom more freely with solid or self-colored flowers.

We offer two strains of California Giants: **Ball Dwarf Giant No. 1** (pictured below), extra dwarf and early blooming, and very popular with florists; and **Ball Dwarf Giant No. 2**, somewhat taller with more color variations.

We also offer florist strains of 3 top-notch Ruffled Grandiflora Petunias which are very popular with gardeners. All three are absolutely uniform for color and habit.

Popcorn. Our best large flowered white. Huge, glistening paper white blooms. Introduced by us last year. More dwarf and compact than White Queen, Snowstorm and White Cloud.

Dwarf Elk's Pride. Best purple blue. Large flowered.

Dazzler. Brilliant, almost incandescent rose.

Price above Grandiflora Petunias, each: 1 pkt. (250 seeds), **75c.**

Below: Ball Dwarf Giant No. 1. Nothing in the floral kingdom surpasses Dwarf Giant Petunias for exquisite color markings from the depth of the throat to the tip of the petal.



For germination, see page 19. When seeds sprout, follow these simple rules.

As soon as seedlings are visible (about ten days) place in a sunny window of a cool room. 55-60° at night and 70° during the day is ideal. If room is dark part of the day, cooler temperatures are necessary. If seedlings are grown in Vermiculite, feed with prepared soluble fertilizer weekly according to directions.

When seedlings have four to six leaves, transplant to larger flats of good soil. Space 2 inches each way. Place in hotbed or cold frame until outdoor planting time. Petunias do best in full sun, but will tolerate up to half shade. They prefer a well aerated, moderately rich soil. Avoid excesses of water and fertilizer.



F₁ HYBRID

A New Era in Petunias

Petunias—the most universally popular of all seed-grown annuals—are now destined to win even greater popularity with flower lovers through the development of F₁ Hybrids.

The florists were the first to sense the importance of this development and many prominent florists now use the F₁ Hybrids almost exclusively!—No wonder

GRANDIFLORAS

Large flowered and dwarf

Tango. Considering color and flower size, this is probably the richest, brightest and most impressive solid color Petunia we offer.

CRUSADER (pictured on Front Cover) This gaily-striped rose pink on white is the loveliest bi-color Petunia we've seen—made an outstanding hit in our test garden last summer. The color variegation of F₁ Hybrid Crusader holds quite steadily throughout the season in spite of variations in temperature and soil. An F₁ Hybrid, Crusader is an exceptionally vigorous grower and free bloomer, yet remains neat and dwarf in habit. 1 pkt. (100 seeds), \$1.50.

Ballerina. This lovely shade of salmon won an All-America award two years ago. The flowers are of exceptional size and it is a very free-flowering variety.

Tango. Florists like this one best of all F₁ Hybrid Grandifloras—a rich bright scarlet similar to Comanche but much larger in flower size, with attractively ruffled petals.

La Paloma. Pure white with yellow throat—a remarkably vigorous strain combining nicely with strong colors.

Bolero. Deep rose, uniform and free-flowering—somewhat more dwarf than others.

Prices above F₁ Grandiflora Petunias (except Crusader) each: 1 pkt. (200 seeds), \$1.25.

F₁ HYBRID

This symbol represents only genuine F₁ Hybrids produced by systematic crossing of individual blooms of two selected inbred parents.

Genuine F₁ Hybrids of flowers are generally superior to inbred varieties in the same way in which Hybrid Corn is superior to inbred corn—**greater vigor, more uniformity and greater production of blooms.**

The term "hybrid" has often been used to describe varieties of hybrid origin or mixtures which are indeed "hybrids" by definition—random crosses of hundreds of different types of individuals. For example, "hybrid" Delphiniums, "hybrid" Zinnias. Such "hybrid" varieties seldom offer the advantages of F₁ Hybrids offered on these pages.

Only Genuine F₁ Hybrids bear this symbol on our lists because they alone offer the advantages of F₁ Hybrids resulting from controlled production from selected parents.

Petunias

many people have the idea that florists' plants are "somehow superior"!

On these pages we present the most complete offering of high-quality F₁ Hybrids obtainable. F₁ Hybrid Petunia varieties are **brighter**, more beautifully **colored**, more **uniform** and **vigorous** by far than comparable inbred or non-hybrid varieties.

Try our F₁ Hybrid Petunias for **faster** growth, more and **brighter** blooms in your garden.

What **is** an F₁ Hybrid? See bottom of opposite page.

MULTIFLORAS

Extra free blooming, medium flower size

Comanche. This "fire engine red" is the most outstanding variety to be found in the important new scarlet red color class. Its F₁ Hybrid characteristics impart an impressive brilliance of color, vigor and freedom of bloom. 1 pkt. (200 seeds), 75c.

Pink Sensation. Well-named light pink, which is the most vigorous, fastest-growing Petunia we offer. A remarkable strain and fine color. Very free-flowering.

Rose Charm. A striking luminous deep rose. This variety has a tendency toward lateral growth and "fills" ground area rapidly, giving the effect of a carpet or thick mat of blooms—very useful for bedding and where mass color is wanted.

Linda. A very popular and pleasing salmon shade, free-flowering and uniform.

Price above Petunias, each: 1 pkt. (200 seeds), 75c.

Below, several hundred commercial varieties including new F₁ Hybrids, being tested for your garden under the experienced eyes of skilled plantmen in our modern 3-acre greenhouse-laboratory.



THREE F₁ HYBRIDS

Comanche (Top)

Pink Sensation (Center)

Rose Charm (Bottom)





Switzerland PIONEERS IN Pansies

As Holland leads in Tulips, Switzerland is the source of the finest and newest in Pansies. And, among the prideful Swiss Pansy breeders and growers, one is recognized as "tops." He is Mr. Roggeli, pictured below. His Pansy seed commands the highest price; yet he has to turn down orders every year.

No one, to our searching knowledge, has produced a match for Roggeli Pansy seed. This strain is unsurpassed for deep, rich Pansy shades, huge flowers, and long-lasting petals of good substance. We offer **only** originator grown Roggeli seeds here, produced by Mr. Roggeli and imported for you.

Roggeli Elite Mixture. Bright, deep, rich colors and mammoth sized flowers on neat, dwarf plants. 1 pkt., (200 seeds), **\$1.50.**

Mr. Roggeli has created a strain of Pansies unexcelled for flower size and richness of color, petal substance, uniform dwarf habit, all important criteria by which Pansy strains are judged.

He is shown here examining one of his selected Pansy blooms.



Roggli Separate Colors

Illustrated:

1. **Thunersee** (Lake of Thun). Intense blue.
2. **Jungfrau**. White.
3. **Blumlisalp** (Raspberry Rose).
4. **Monch** (Coronation Gold). Golden yellow.
5. **Hohenfeuer** (Firebeacon). Burnt orange.

Price above Pansies each:
1 pkt. (200 seeds), \$1.50

Collection. 1 pkt. each of
above 5 varieties, \$7.00



Other Roggли Varieties

Alpengluhn (Alpenglow). Shades of dark red with near-black centers.

Berna. Large, dark blue.

Eiger (Rhinegold). Large flowered, brilliant yellow with dark brown center.

Roggli Elite Mixture.

See opposite page.

Prices above Pansies, each:
1 pkt. (200 seeds), \$1.50.

OTHER EXCELLENT "FLORIST-TYPE" PANSY MIXTURES:

Steele's Jumbo Mixture. The best American strain. 1 pkt. (200 seeds), \$1.00.

Ruffled Rainbow. Extra dwarf, rich colors, and attractively ruffled. 1 pkt. (300 seeds), 75c.

Canadian Giants. Consistently the largest flowers in our trials. 1 pkt. (300 seeds), 75c.



The "fairyland" setting for Mr. Roggли's Pansy seed field production — background, Lake of Thun, and the Swiss Alps.



TIGRESS

Reds, yellows, orchids and purples in novel striped and blotched arrangements of at least three colors. Small flowers, but blooms very profusely and is unusually fragrant. 1 pkt. (300 seeds), 50c.



FELIX

The colors of this unusual ruffled Pansy are rich and striking—including purple, apricot, wine, bronze, and smoky tones—all with contrasting dark "whiskers". 1 pkt. (300 seeds), \$1.00.

 Sow in January or early February in clay pans or "flats" in loose, friable soil where a night temperature of 60° can be maintained. After germination, plenty of light and 50° nights will suit them nicely. When large enough to handle, transplant to other flats or a cold frame where they may be gradually exposed to outdoor temperatures as low as 40°. This will build hard, sturdy plants which may be planted in the open as soon as freezing weather is past. Afternoon shade is desirable in warm localities.

Pansies may also be sown in late summer (about 2 months before frost) for large, early spring blooming plants. Sow in a cold frame and transplant 4 inches apart. Protect plants after freezing weather in north with brush cover.

Originator Delphinium

Stately Delphiniums are without question the Queen of garden perennials—and rightfully so. In their regal splendor is expressed almost the ultimate of the plant breeder's art. All of the Giant Pacific varieties listed on this page are the work of California's famous Delphinium and Tuberous Begonia specialist, Mr. Frank Reinelt. They are accepted the world over as the standard by which other strains are judged.

Not all Giant Pacific Delphinium seed is produced by Mr. Reinelt, however. Many seed growers produce their own seed of this strain, using the originator's seed for planting stock. All seed which we offer is **grown by and comes directly to us from the originator** of this remarkable Delphinium, your guarantee of top quality.

Astolat. Colors range from pale blush to raspberry rose with some near-pink shades. All have dark "bees". 1 pkt. (150 seeds), **\$1.50.**

Black Knight. The darkest of all blues—a deep, velvety shade.

Blue Bird. A clear, bright mid-blue with white "bees". Very attractive.

Galahad. The purest white imaginable. Three inch flowers are not uncommon with this variety.

Guinevere. A beautiful, light orchid-lavender with white "bees".

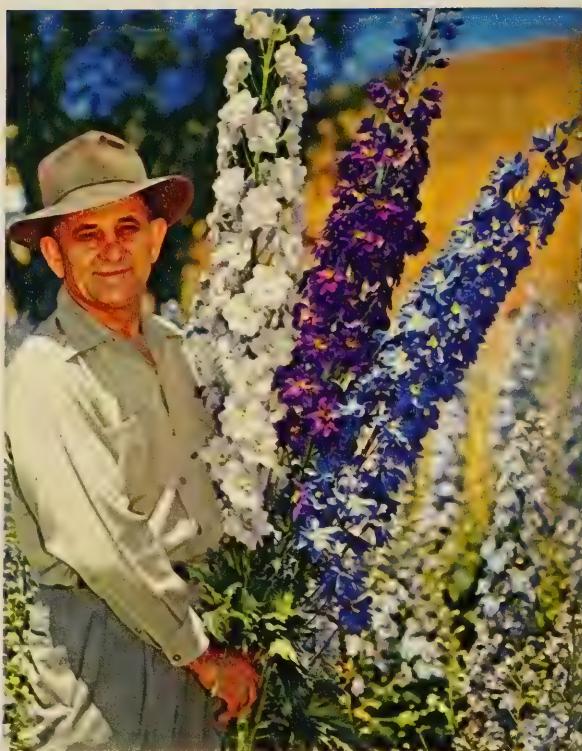
King Arthur. Deep, royal purple with contrasting white "bees". An unusually striking combination.

Price above Delphiniums (except Astolat), each: 1 pkt. (150 seeds), \$1.00.

Collection. 1 pkt. each of 7 separate colors of above Delphiniums, **\$6.00.**

Delphiniums are easy to grow if a few simple requirements are met. Seed may be sown in late winter or early spring in clay pots or wooden "flats" using a fibrous, somewhat sandy soil. Night temperatures should be around 60° until seedlings are up, after which 50° at night will help to prevent soft growth. After germination full sunlight is essential. When seedlings are about an inch high and have developed true leaves, they may be planted in the open after frost danger has passed. A location with sunlight at least half the day is desirable as is a well-drained, light soil to discourage root rot. Some plants will bloom late the first summer with plenty of flowers the following year. Where winters are severe, plants should be protected with coarse brush or corn stalks.

Seed may also be sown in late summer so that seedlings can be planted out in time to become established before the ground freezes. This will insure a greater number of flowers the first summer than will a spring sowing.



Mr. Frank Reinelt, originator of the magnificent Giant Pacific strain of Delphinium which bears his name: Vetterle-Reinelt strain. Left to right: Galahad, King Arthur, and Blue Bird.

Summer Skies. A light, airy, azure-blue with white "bees".

Ball Best Mixture. A formula blend of the above and other interesting Giant Pacific varieties. A real "treasure hunt" for Delphinium lovers.



Salvia (Scarlet Sage)

This popular annual with its brilliant scarlet flower has come a long way since the days of the old-fashioned, late flowering variety. No longer need you wait until fall to enjoy a few brief weeks of its splendor. Both of the following varieties are well adapted for home garden use. Seed may be sown where they are to flower, or may be started earlier in flats or pans in a frame. For best germination night temperatures should not be less than 60°.

St. John's Fire. Extremely early, dwarf and bushy, with vivid scarlet flowers from mid-summer on. Try it for borders. About 12 inches high. 1 pkt. (200 seeds), \$1.00.



ST. JOHN'S FIRE

America. Later and taller (20 inches) than St. John's Fire. A fine variety for background planting that will give you weeks of fiery red color. 1 pkt. (200 seeds), 50c.

Zinnias

Always colorful and easy to grow, and now with the new Giant Cactus type, Zinnias have attained a charm and gracefulness previously lacking in this popular flower.

The large flowers are made up of many strap-shaped, ruffled and fluffed petals which curve under and twist gaily to create great refinement.

Seed may be sown where the plants are to flower when night temperatures have reached 60°, or they may be sown two weeks earlier in flats and transplanted. Allow 12-18 inches between plants.

BLAZE

Blaze. (All America Selection)
A combination of fiery, mandarin red and scarlet-orange.



Floradale Scarlet. Scarlet red.

Riverside Beauty. Coral rose.

Sunny Boy. Rich, buttercup yellow.

Eskimo. Creamy white changing to white.

Ball Giant Cactus Mixture. All of the above and other shades in a wealth of pleasing colors.

Peppermint Stick. Not a cactus type Zinnia, but with perfectly rounded, medium sized flowers in vivid striped combinations of various colors as illustrated. 60% to 70% are true to type —balance solid colors.

Ball Dahlia Flowered Florist Mixture. The most popular large flowered type before the Giant Cactus Zinnias were introduced. Our mixture is a balanced blend of named varieties demanded most by florists for cutting.

Price all above Zinnias, each:
1 pkt. (200 seeds), 50c.

← PEPPERMINT STICK

A real charmer with its gaily striped and variegated petals. A truly unique Zinnia.



Warm Temperature

AFRICAN VIOLETS

(*Saintpaulia*)

FROM SEED!

We know of no flowering house plant which has increased its popularity so tremendously in recent years as has the African Violet. This is no doubt due to its adaptability to conditions prevailing in most homes and its simple requirements; namely, protection from direct sunlight, uniform moisture (water used should be of room temperature), and home or greenhouse air temperature of 65-75°. While often propagated by leaf cuttings, African Violets are not too difficult to raise from seed. Germination is slow, taking about a month at 70° minimum. Sow during spring.

Hybrid Mixture. Containing shades of the popular African Violet colors of violet and lavenders thru white. 1 pkt. (100 seeds), \$2.00.

Blue Fairy Tale. Deep, intense violet blue. This strain imported from Europe where it is very popular. 1 pkt. (100 seeds), \$1.00.

Begonias

(Fibrous-Rooted)

Along with African Violets we consider Fibrous Rooted Begonias among the most satisfactory flowering house plants. After the seedlings are well under way, cultural requirements are simple. They enjoy moderately warm temperatures and partial sunlight. In addition you'll find them admirably suited for outdoor bedding use in semi-shaded locations, and where summer temperatures do not exceed 90° except for brief periods. Best sown during early spring. The following varieties are the most popular sorts grown by florists today. All have waxy, shiny leaves.

Scandinavia Pink. Very free flowering, bright, luminous rose pink with green leaves. Fine, bushy habit.

Scandinavia Red. Identical to Scandinavia Pink in all respects except for its vivid carmine red flowers.

Ball Red. The most intense, pure scarlet red ever seen in Fibrous Rooted Begonias. Bright green foliage.



Snowbank. Picture dozens of large, glistening white flowers against a background of emerald green foliage.

Indian Maid. Rich, metallic, bronze foliage makes a wonderful foil for this variety's bright red blooms.

Carmen. Clear rose pink flowers are freely produced against a background of lustrous bronze leaves.

Price above Begonias, each: 1 pkt. (1500 seeds), **75c.**

Plants for Indoor or Greenhouse Growing



These lovely blooms were produced in only six months from sowing! Sown early January, minimum 60° temperature.

These warm temperature plants like night temperatures of 60-65° with day readings at least 10° higher. These very tiny seeds should be germinated without soil covering. Partial shade is necessary. Seedlings should go first into small pots, shifting to larger sizes as they grow. Soil mixtures should contain liberal quantities of humus such as leaf mold or well decomposed manure, with additional sand added if soil is heavy. Keep pot plants uniformly moist, but not muddy.

TUBEROUS Begonias FROM SEED

Florists' Mixture. Large, double Camellia-type flowers in a wonderful array of colors. We blend this mixture by formula from the world's finest separate color varieties.

Separate Colors also available: Red, Scarlet, Orange, Rose, Salmon, Copper, Yellow, and White.

Price above Tuberous Rooted Begonias, each: 1 pkt. (500 seeds), \$1.50.

GLOXINIAS

A remarkably showy and satisfactory summer blooming pot plant. Its large, velvety, bell-shaped flowers are borne on short stems above the luxurious foliage which somewhat resembles that of an African Violet. While often grown from tubers, they are easily grown from seed sown in October and November, and many florists grow them this way.

Ball Special Mixture. Our own formula blend of choice separate varieties. A riot of color in red, pink, blue and violet. 1 pkt. (500 seeds), \$1.50.

Separate Colors also available on request at the same price.

Crossandra

This native of India has become one of the newest and most exciting pot plants in recent years. It's almost a perpetual bloomer with sheaves of overlapping, bright salmon-orange petals and rich, glossy, Gardenia-like foliage. We introduced Crossandra to the florist trade 2 years ago where it "caught on" quickly. It requires a warm temperature for germination and growing —70° at least. Full cultural directions sent with each packet. 15 seeds, \$1.00; 50 seeds, \$3.00.



Cool Temperature Plants for



SNAPS

For those gardeners who are interested in growing Snapdragons for cut flowers, or for both bedding and cut flowers (either under glass or outdoors where some protection is offered), we suggest the following varieties. These varieties are selected from the best-known and most widely used florist type early-flowering cut flower Snapdragons. **Note that they are all F₁ Hybrids.**

Snowman. Pure white, long spikes and large florets.

Golden Spike. A rich deep golden daffodil yellow.

Rosanna. Deep bright rose, long tapering spikes.

Hercules. Light pink, close set florets, and very hard stem.

Indian Chief. Rich bright bronze.

Navajo. Rich maroon red with extra long stems and spikes.

Lavender Lady. A lovely soft orchid lavender shade.

Price above Snapdragons, each: 1 pkt. (300 seeds), \$1.00.

Collection. 1 pkt. each of above 7 varieties, \$6.00.



GOLDEN SPIKE

COLUMN STOCKS

Column Stocks are one of the most important seed-produced cut flowers used by florists. They have gained immensely in popularity, especially on the West Coast. They were introduced to the American trade by Geo. J. Ball, who discovered one color of the column type while traveling in Germany in the early 30's. He developed this type into the many colors which are still widely used by commercial florists today.

In the East and Midwest, Stocks are suited to greenhouse culture only—reason: they refuse to set bud in temperatures over 65° for six hours a day. However, this subject is ideally suited to West Coast climate and, of course, glass house culture. They have gracefully tapering spikes, lovely pastel shades—and above all, a scent or aroma of sufficient appeal to be used as a base for many fine perfumes. Cultural directions are included with each order.

No. 16 Ball White. Florists buy this variety 2 to 1 over any other on our list.

No. 1 Lilac Lavender. Silvery lilac; a pleasing shade.

No. 8 Ruby. A genuine ruby red, brilliant and striking.

No. 22 Ball Supreme. The most vigorous of all we offer—a lovely rose shade.

No. 21 Purple Heart. Bright purple.

Price above Column Stocks, each: 1 pkt. (400 seeds), \$1.00.

Pacific Pink. The first entirely new color in Stocks in over a decade. A bright, luminous, warm pink—an entirely different color from its closest comparison, No. 22 Ball Supreme. 1 pkt. (300 seeds), \$1.50.



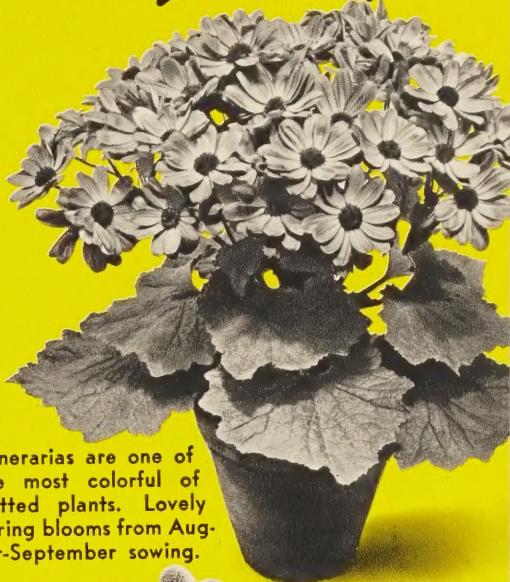
Indoor or Greenhouse Growing

CINERARIAS

Bright colors and easy culture make this a popular potted plant.

Festival. A Ball introduction. Small leaved plants are bushy and compact; brilliant color range. 1 pkt., (300 seeds), \$1.50.

"Vivid" Formula Mixture. A mixture of solid colors (without eyes). 1 pkt. (300 seeds), \$2.00.



Cinerarias are one of the most colorful of potted plants. Lovely spring blooms from August-September sowing.

CALCEOLARIAS

"Lady's Pocket Book"

An excellent showy pot plant which may be easily grown from seed. Requires a cool temperature and moderate watering. Summer sowing for spring blooms.

Ball Multiflora Nana Mixture. 1 pkt., (500 seeds), \$1.50.

CYCLAMEN

Cyclamen require 12 to 15 months to bloom from seed normally sown in the fall. They are one of the loveliest and most rewarding winter blooming potted plants available.

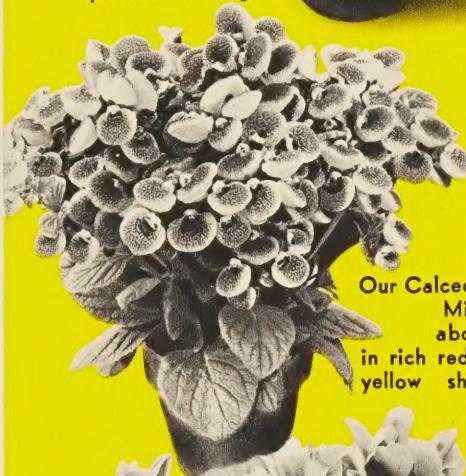
Special Imported Florist Strains:

Pure White	Scarlet
Light Salmon Rose	Dark Salmon Rose
Blood Red	Clear Rose

Ball Best Mixed. Best of 25 varieties.

Fringed Mixture. Flowers are attractively fringed with unusual shapes and markings.

Price Cyclamen, each: 25 seeds, \$1.50; 50 seeds, \$2.75; 100 seeds, \$5.00.



Our Calceolaria Mixture abounds in rich red and yellow shades.



We stock all known commercial colors of Cyclamen and will gladly fill special orders at above prices.

Continued on next page

Watch ventilation and temperature carefully. Nothing is worse for plants than a warm, muggy atmosphere without good air circulation—ideal conditions for insects and plant disease organisms. Use ventilating sash when weather is not too severe. Most greenhouse plants (except warm temperature

Cool Temperature Plants

Continued



PRIMULA MALACOIDES

PRIMULA MALACOIDES

(Baby Primroses)

A favorite pot plant for winter months, best sown in June before the summer heat, or in September. Sowings after October 15 seldom flower. Once plants are up they are easily grown. Give them cool temperatures and don't let them dry out.

Ball Florist Mixture. Formula mixture of shades of rose, red, lavender, and white. 1 pkt. (500 seeds), \$1.00.

IMPA TIENS (Sultanas)

While listed in this section, Impatiens is one of the few annuals which can be depended upon to give an abundance of color throughout the summer in a shady location. Also makes an excellent pot plant.

Sultani Dwarf Mixed. Uniformly dwarf. Shades of red, salmon and rose pink. 1 pkt. (300 seeds), \$1.00.

CULTURAL NOTES *continued from page 17.*

varieties listed on pages 14 and 15) do well in a night temperature of 50° with 57° on cloudy days and 65° on sunny days.

Water carefully, adequately, and avoid wetting foliage. How often to water will depend on the weather, the size of the plants, and time of year. During dark, damp weather very little watering is necessary; during bright, dry weather it's often difficult to keep up with this requirement of plant life. A good rule is water less often and more thoroughly.

As a last reminder, be on the lookout for insect pests. Once they become well entrenched, they are hard to get rid of.

DO YOU HAVE A "SHADE" PROBLEM?

These annuals like more or less shade, and will lend some life and color to that "difficult" shady spot. Most of these items respond well to pinching, so don't be afraid to pinch them back hard if they get too leggy.

Fibrous Begonias
Tuberous Begonias
Coleus
Salvia
Impatiens

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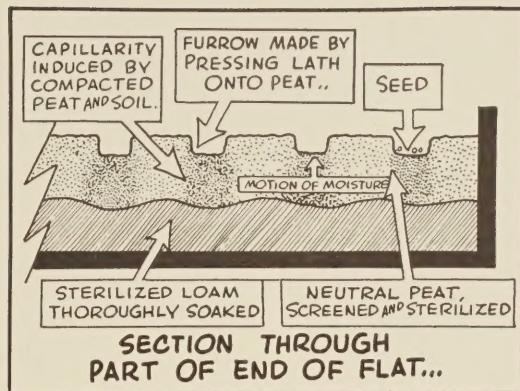
CONDITIONS OF SALE. Geo. J. Ball, Inc., warrants to the extent of the purchase price that seeds sold are as described on the container within recognized tolerances. Seller gives no other or further warranty, express or implied.

Wherever you see this red dot, you will find valuable cultural notes. For finest results, follow these reliable rules. If they can't be applied in your situation, better choose Ball seeds that take a more suitable culture.

→ Percentage of germination, complete cultural information, and approximate number of seeds are found on all Ball SEEDcraft packets. ←



Sterilizing soil in an oven—at least 200° for 45 minutes is simple—eliminates weeds, improves physical texture of the soil, and of course kills insect and disease organisms.



Tips on Seed Sowing

While many seeds may be satisfactorily sown in the open ground, much better results are usually obtained with seeds the size of Snapdragons or smaller if the sowing is done in pans, "flats" or other suitable containers. Among the most important points are:

1. **Clean soil**, which means soil free of weed seeds and harmful bacteria or fungi. Florists sterilize their soil with steam, but the same purpose may be accomplished by heating it in a dishpan in an oven for about 45 minutes at 200-250°. Soil should be moist but not wet.

2. **Uniform moisture**; to let your seed flat dry out while seeds are germinating can easily kill the sensitive germ.

3. **Good ventilation**; a mild air circulation immediately after germination, but not a windy spot.

4. **Proper temperature**; most annuals sprout best in a uniformly maintained temperature of 60-70°—lower after seedlings are $\frac{1}{2}$ inch tall.

For our own germination we get best results by filling our flats half way with loam (see illustration) which is thoroughly soaked until muddy. The flat is then filled with screened and moistened neutral peat, or fine grade Vermiculite, leveled off with a board but **not** packed down. Rows $1\frac{1}{2}$ inches apart are then made by pressing the edge of a lath $\frac{1}{4}$ inch into the surface. Seed is sown **thinly** in these rows and **no** soil covering added if seeds are small. "Misting" with a fine spray after sowing completes the job. Flats or pans may be covered with a newspaper, but seedlings must be exposed to light immediately after germination. If Vermiculite is used it will be necessary to add nutrients after the seeds have germinated. Any liquid plant food used according to directions will be satisfactory.

Larger seeds may be sown direct in the open ground if the seed bed is thoroughly prepared and well pulverized. Organic matter in the form of well-rotted manure or neutral peat should be added if the soil is "tight" or tends to pack.



Mr. Weber, a florist customer of ours from Royal Oak, Michigan demonstrates what happens when seed is sown too deep. The right hand corner of this flat of peppers was sown to a depth of $\frac{1}{2}$ inch. The balance of the flat, sown $\frac{1}{8}$ - $\frac{1}{4}$ inch deep, germinated beautifully. The deep sown seed never did grow—rotted out because of poor aeration.

An additional word about germination. Recently a Government agency in New York State tested a large number of flower seed packets available in retail displays and by mail. 25% of those tested were unsatisfactory in germination.

We have been selling flower seeds to florists for nearly 50 years. Florists make a living from the seed we supply them. We supply only fresh seed of highest possible germination from our own production or from other reliable sources. All our seed is tested several times during the selling season to insure continued vitality.

The percentage of germination of the latest test, complete cultural information, and the approximate number of seeds are found on each packet offered in SEEDcraft.



F₁ Hybrid "Snaps", unexcelled in vigor and pure, bright colors for outdoor growing. Left to right: yellow, Stardust; bronze, Harvest Moon; rose, Mexicali Rose; Bob White; and red, Temptation.

Memory. A clear medium pink shade. Very productive.

Temptation. The most brilliant, velvety crimson red color imaginable.

Bob White. Long spikes of clear white with just a hint of soft ivory shading.

Stardust. An intense golden yellow. So vivid that you won't believe it.

Price above Outdoor Snapdragons, each: 1 pkt. (200 seeds), \$1.00.

All of the genuine F₁ Hybrid Snap seed which we sell is produced from carefully line-bred parent strains in which each flower is methodically cross-pollinated by hand to produce every seed pod. This is true also of the F₁ Hybrid Petunias listed on pages 8 and 9. This is a costly process to produce the quality which our florist trade demands, but one we think home gardeners are also entitled to. If you've never grown F₁ Hybrid flowers before, you have a real treat in store. Phil Jones (pollinating Snaps in photo at right) is our head plant breeder and originator of many of the modern strains found in this catalog, including Ball Hybrid Snapdragons and Asters.

Geo. J. Ball
INC
WEST CHICAGO
ILLINOIS

Successful Florists Sow BALL Seeds

"HIT PARADE" OF

F₁ HYBRID

Snapdragons

FOR BEDDING

You've always prized "Snaps" for summer bouquets as much as you've admired the display they make in your garden. But you've never grown Snaps like these before! They're genuine F₁ Hybrids (produced by hand crossing two separate inbred parents) to give you the most modern Snaps that plant breeding science can offer. They're earlier by many days than ordinary outdoor Snaps; more freely base branching, giving you extra flowers; and their upright, stiff stemmed habit enables them to withstand moderate winds without support. Colors and plant habit are absolutely true to type. Seed should be sown in pans or flats 3 to 4 weeks before time to transplant outside. Space plants 10 to 12 inches apart.

Sophisticated Lady. A pleasing orchid lavender wins praise from all who see it.

Harvest Moon. A fiery orange scarlet. Stands out like a beacon in any planting.

Mexicali Rose. A deep rose color reminding you of the ripest watermelon.

Hit Parade Mixture. Our own mixture, blended by formula from the above and other colors. Not a field-grown mixture.

